

WHAT IS CLAIMED IS:

1. A method for detecting a DNA strand break, comprising the steps of:

binding a PprA protein derived from Deinococcus radiodurans or a fragment thereof to a DNA strand break;
and

detecting the PprA protein or a fragment thereof bound to the DNA strand break.

2. The method for detecting a DNA strand break according to Claim 1, wherein the PprA protein derived from Deinococcus radiodurans or a fragment thereof is a protein having an amino acid sequence of SEQ ID NO: 1 or a fragment thereof.

3. The method for detecting a DNA strand break according to Claim 1 or 2, wherein the PprA protein or a fragment thereof bound to the DNA strand break is detected using an antibody or a fragment thereof which specifically bind to the PprA protein or a fragment thereof.

4. The method for detecting a DNA strand break according to Claim 3, wherein the antibody is a polyclonal antibody or a monoclonal antibody.

5. A kit for detecting a DNA strand break, comprising an amount of PprA protein derived from Deinococcus radiodurans or a fragment thereof and a means for detecting the PprA protein or a fragment thereof.

6. The kit for detecting a DNA strand break according to Claim 5, wherein the PprA protein derived from Deinococcus radiodurans or a fragment thereof is a protein having an

amino acid sequence of SEQ ID NO: 1 or a fragment thereof.

7. The kit for detecting a DNA strand break according to Claim 5 or 6, wherein the means for detecting the PprA protein or a fragment thereof comprises an antibody or a fragment thereof which specifically binds to the PprA protein or a fragment thereof.

8. The kit for detecting a DNA strand break according to Claim 7, wherein the antibody is a polyclonal antibody or a monoclonal antibody.